



# OPERATIONAL HEAT STRESS

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# **OVERVIEW**

- HEAT DISORDERS**

  - SYMPTOMS**

  - WARNING SIGNS**

  - TREATMENT**

- LOCAL CONDITIONS AND ORDERS**

- SUMMARY**

*HOW TO RECOGNIZE & TREAT ...*

***HEAT STROKE OR  
HEAT EXHAUSTION***



**Heat Cramps:** This normally happens after exercise. Most often to people who aren't used to the heat, who sweat a lot or don't drink enough fluids.

**Symptoms:** Severe pain and cramps in legs and abdomen, fainting or dizziness, weakness, profuse sweating and headaches.



**TREATMENT: Increase fluid intake, increase salt intake, rest and move to a cool place.**

**Heat Exhaustion:** This is caused by the loss of body fluids and important salts due to overexposure to high temperatures and humidity. Usually you are exposed to heat for a prolonged amount of time and you become dehydrated.

**Symptoms:** Headache, nausea, fatigue, dizziness, skin is cool and pale, pupils become dilated. Victim is usually conscious but may faint, has a core temperature of over 102.

- ◆ Heat Exhaustion starts with the accumulation of large quantities of blood in the skin in the body's attempt to increase its cooling efficiency.
- ◆ This is normally due to temperature conditions the individual is not used to.
- ◆ There is a loss of circulating blood volume in the body which decreases the blood supply to the brain, increasing the likelihood of fainting.

**TREATMENT:** Get to the shade, cool off, increase fluids, cold wet towels or ice, fan, elevate legs above heart, loosen clothing, don't give any liquids containing alcohol or caffeine, may need IV. If condition worsens seek medical attention immediately. If **left untreated** Heat Exhaustion can lead to **HEATSTROKE**.



**Heat Stroke:** Is a medical emergency and a life threatening condition. It is caused by the failure of the heat-regulating mechanisms of the body, due to high heat and humidity.

**Symptoms:** Headache, nausea, dizziness, skin is red, dry and very hot (sweating has ceased). Pulse is strong and rapid, small pupils, high fever 105. May be disorientated, lose consciousness, possible convulsions.

- ◆ The underlying cause of heat stroke is connected to the sudden inability to dissipate body heat through perspiration.
- ◆ This accounts for the excessive rise in body temperature and it's the high fever which can cause permanent damage to internal organs, and can lead to death.

- ◆ When someone passes out from heat stroke, his or her brain is being cooked just as the colorless part of an egg turns white when it hits the griddle.
- ◆ Any cold liquid should be used to cool the victim.
- ◆ Once revived, the victim should be watched for more than an hour as his temperature can start to rise to high levels again.

**TREATMENT:** Remove to cooler location, loosen clothing, immerse in cool water, wrap in wet sheets, cold compresses to the head, neck and groin. **SEEK MEDICAL ATTENTION IMMEDIATELY.** **DO NOT** give medication to lower fever, **DO NOT** use an alcohol rub.



# **GENERAL PRECAUTIONS**

- ◆ Every year people pass out and some even die during exercise from heat stroke. But you do get plenty of warning.
- ◆ First your muscles are affected, as your temperature rises they feel like a hot poker is pressing against them.
- ◆ As your temperature rises further, the air you breathe feels like it is coming from a furnace and no matter how hard you try, you can't get enough air.... **STOP EXERCISING.** Take a break and drink fluids.

- ◆ If you continue, your body temperature will rise further and affect your brain.
- ◆ Your head will start to hurt, you will hear ringing in your ears, you will feel dizzy and may have difficulty seeing, and the next step is unconscious on the ground.
- ◆ Know your limits, recognize your physiological response, and drink plenty of fluids prior to and during training evolutions.

- ◆ CCO 6200.3D covers MCAGCC Heat Warning Flag Conditions

- ◆ Naval Hospital manages system and posts conditions on the Internet

- ◆ Unit Safety Functions monitor web-site for changes

- ◆ BearMat Notifies Units of drastic changes

- ◆ If system goes down, phone calls are made periodically, or as conditions change



- ◆ Operational units should add 10 degrees to the listed WBGT, due to wear of Tactical Gear

- ◆ This denotes extra care and vigilance to recognize symptoms and warning signs

- ◆ Planning is key

- ◆ Unit Safety/Logistics Plays and Integral Role

- ◆ Heat Stress Victims are extra sensitive to further episodes due to physiological changes that occur resultant to heat strain.

- ◆ Can limit operational effectiveness to a degree

- ◆ Application of ORM Principles is key

**QUESTIONS?**